

**AMENDMENTS TO THE CLAIMS:**

This listing of the claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

Claim 71 (Currently amended): A method of detecting a nucleic acid, comprising:

- a) providing:
  - i) a cleavage means comprising an enzyme comprising a 5' nuclease;
  - ii) a target nucleic acid, said target nucleic acid comprising a first region and a second region, said second region downstream of said first region;
  - iii) a first oligonucleotide comprising a 3' portion and a 5' portion;
  - iv) a second oligonucleotide, wherein said second oligonucleotide comprises a nucleic acid sequence different than said first oligonucleotide; and
  - v) a third oligonucleotide;
- b) mixing said cleavage means ~~enzyme comprising a 5' nuclease~~, said target nucleic acid, said first oligonucleotide, and said second oligonucleotide under conditions such that at least said 3' portion of said first oligonucleotide is hybridized to said first region of said target nucleic acid and wherein at least a portion of said second oligonucleotide is hybridized to said second region of said target nucleic acid to form a first complex, and wherein said cleavage of said first complex by said cleavage means ~~enzyme comprising a 5' nuclease~~ liberates said 5' portion of said first oligonucleotide as a first cleavage product;
- c) reacting said first cleavage product with said third oligonucleotide and said cleavage means ~~enzyme comprising a 5' nuclease~~ such that at least a portion of said first cleavage product is hybridized to said third

oligonucleotide to form a second complex, wherein cleavage of said second complex generates a second cleavage product; and

- d) detecting the cleavage of said second complex, thereby detecting a nucleic acid.

Claim 72 (Original): The method of Claim 71, wherein said detecting the cleavage of said second complex comprises detecting said second cleavage product.

Claim 73 (Original): The method of Claim 71, wherein said conditions comprise isothermal conditions.

Claim 74 (Original): The method of Claim 71, wherein said detecting the cleavage of said second complex comprises detection of fluorescence.

Claim 75 (Original): The method of Claim 71, wherein said detecting the cleavage of said second complex comprises detection of mass.

Claim 76 (Original): The method of Claim 71, wherein said second complex comprises a fluorophore having quenched emission, and wherein said detecting the cleavage of said second complex comprises detection of an increase in fluorescence intensity.

Claim 77 (Original): The method of Claim 71, wherein said detecting the cleavage of said second complex comprises detection selected from the group consisting of detection of radioactivity, luminescence, dye intercalation, fluorescence polarization, staining, or color.

Claim 78 (Original): The method of Claim 71, wherein said first oligonucleotide is attached to a solid support.

Claim 79 (Original): The method of Claim 71, wherein said second oligonucleotide is attached to  
a solid support.

Claim 80 (Original): The method of Claim 71, wherein said third oligonucleotide is attached to a  
solid support.

Claim 81 (Canceled)

Claim 82 (Previously presented) The method of Claim 71, wherein said enzyme comprising a 5'  
nuclease comprises a DNA polymerase.

Claim 83 (Original): The method of Claim 82, wherein said DNA polymerase comprises a  
thermostable DNA polymerase.

Claim 84 (Previously presented): The method of Claim 83, wherein said thermostable DNA  
polymerase is derived from an organism from the genus *Thermus*.

Claim 85 (Canceled)

Claim 86 (Previously presented): The method of Claim 71, wherein said enzyme comprising a 5'  
nuclease comprises a thermostable 5' nuclease derived from a thermostable DNA  
polymerase modified to have reduced synthetic activity.

Claim 87 (Original): The method of Claim 71, wherein said first and said second regions of said  
target nucleic acid are adjacent to each other.

Claim 88 (Original): The method of Claim 71, wherein a portion of said second oligonucleotide  
that is hybridized to said target nucleic acid comprises a 3' terminus.

Claim 89 (Original): The method of Claim 71, wherein said third oligonucleotide comprises a

hairpin structure that comprises a duplex region adjacent to a single-stranded 3' arm.

Claim 90 (Original): The method of Claim 89, wherein said portion said third oligonucleotide hybridized to said portion of said first cleavage product comprises at least a region of said single-stranded 3' arm of said hairpin structure.

Claim 91 (Original): The method of Claim 90, wherein said region of said single-stranded 3' arm is adjacent to said duplex region of said hairpin structure.

Claim 92 (Original): The method of Claim 71, wherein a portion of said first cleavage product that is hybridized to said third oligonucleotide comprises a 3' terminus.

Claim 93 (Original): The method of Claim 71, wherein said cleavage of said second complex cleaves said third oligonucleotide.

Claim 94 (Previously presented): The method of Claim 93, wherein said cleavage of said third oligonucleotide is within a duplex region.

Claim 95-123 (Canceled)